thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] and the like, or mixtures thereof.

Other fillers which may be used in the present invention include, for example, glass particles, glass fibres, calcined kaolin, talc and the like, or mixtures thereof. Processing co-adjuvants usually added to the polymer base are, for example, calcium stearate, zinc stearate, stearic acid, paraffin wax, silicone rubbers and the like, or mixtures thereof.

The flame-retardant compositions according to the present invention are preferably used in non-crosslinked form, in order to obtain a coating with thermoplastic properties which is thus recyclable.

The flame-retardant compositions according to the present invention can be prepared by mixing the polymer base, the flame-retardant filler, the dehydrating agent and the other additives which may be present according to techniques known in the art, for example using an internal mixer of the type containing tangential rotors (Banbury) or interlocking rotors, or in continuous mixers of the Ko-Kneader (Buss)type or of the co-rotating or counter-rotating twin-screw type.

Preferably, the dehydrating agent is introduced after a first phase of processing the composition during which, on account of the heating generated by the compounding process, the flame-retardant filler loses a certain amount of the moisture absorbed. In this way, premature depletion of the water-absorbing capacity of the dehydrating filler is avoided, this filler needing to be active mainly during the subsequent extrusion phase. The temperature of the composition in this first compounding phase is at least 100°C, preferably at least 150°C, and is carried out for a period of at least 5 minutes.

Alternatively, rather than adding the dehydrating agent during the phase of preparation of the

flame-retardant composition, it can be added during the extrusion phase, for example via the extruder hopper.

In both cases, the dehydrating agent can be added to the flame-retardant composition in divided form (granules, powder), optionally coated with dispersing and protective agents, such as microwaxes, fatty acids and the like. Alternatively, in order to improve its dispersion in the polymer base, the dehydrating agent can be used predispersed in a polymer material (for example a semi-crystalline ethylene/propylene rubber).

During the extrusion phase, the flame-retardant compositions thus obtained can be used to coat the conductor directly, or to make an outer sheath on the conductor which has been precoated with an insulating layer. When two layers are present, the extrusion can take place in two separate phases, the inner layer being extruded on the conductor in a first passage and the outer layer being extruded on the inner layer in a second passage. Advantageously, the coating process can take place in a single passage, for example by means of the "tandem" technique, in which two separate extruders arranged in series are used, or alternatively by co-extrusion with a single extrusion head.

The temperature at which the flame-retardant composition is extruded can vary within a wide range and is predetermined as a function of the extrusion rate to be obtained. The extrusion rate in fact depends on the viscosity of the composition in the molten state and thus on its temperature. In turn, the viscosity depends mainly on the type of polymer base and on the type and amount of flame-retardant filler used. The minimum extrusion temperature for the composition is generally not less than the plasticization temperature of the polymer base, while the maximum extrusion temperature is predetermined so as to avoid degradation or decomposition of the polymer base and/or of the flame-retardant filler. Thus, on the basis of the

abovementioned criteria, in the case of flame-retardant compositions based on a mixture of polypropylene and ethylene/α-olefin copolymers as described above, in which magnesium hydroxide is used as flame-retardant filler, the temperature at which the flame-retardant composition is extruded is generally between 160°C and 320°C, preferably between 200°C and 280°C.

Although the present description is mainly directed towards the production of self-extinguishing cables by extrusion, the advantages deriving from the use of the dehydrating agent according to the present invention can be evident in different extrusion or moulding processes for the general production of rubber articles in which hygroscopic fillers are used, for example junction boxes for electrical cable junctions or terminals, in particular when high processing temperatures are required in order to obtain increased fluidity of the material to be extruded or moulded.

Some examples of embodiments will now be reported for the purpose of illustrating the present invention more clearly, with particular reference to the attached:

Figure 1, which is a schematic drawing in cross-section of a self-extinguishing, low-voltage unipolar electrical cable which can be made according to the present invention.

The term "low-voltage" generally means a voltage of less than 2 kV, preferably less than 1 kV.

The cable in Fig. 1 comprises a conductor (1), an inner layer (2) which functions as an electrical insulator, and an outer layer (3) which functions as a protective sheath with flame-retardant properties.

The inner layer (2) can consist of a crosslinked or non-crosslinked, halogen-free polymer composition with electrical insulation properties, which is known in the art, chosen, for example, from: polyolefins (homopolymers or copolymers of various olefins),